

U.S. Patent Application Serial No. 10/015,564
Amendment dated August 4, 2003
Reply to OA of April 11, 2003

REMARKS

Claims 24-58 are pending in this application. Claims 1-23 have been canceled without prejudice or disclaimer and new claims 24-58 have been added.

Applicants note that original independent claim 1 has been divided into two new independent claims: claim 24 including an amine curing agent of (A) and (B), including the limitation of claim 3; and claim 26 including an amine curing agent of (A), (B) and (C), wherein original claim 5 was changed to independent form including all of the limitations of original claim 1. Likewise, original independent claims 6, 7 and 12 have been divided respectively into two new independent claims.

Applicants therefore submit that new claims 24-58 find written support in original claims 1-23.

The Specification is objected to.

The objection is overcome by the amendments to the specification, correcting the spelling of **metaxylylenediamine**.

Claims 18, 20 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

The rejection is moot in view of the cancellation of claims 18, 20 and 22 without prejudice or disclaimer.

Applicants note that original claim 18 recited possible specific structures for the multilayered laminate. The recitation of new claim 42 is based on that of original claim 18. The first specific

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structure recited in claim 42 are (F)-(G)-(F), that is, only the two (F) outer layers and the (G) intermediate layer. The second specific structure is (F)-(G)-(P)-(G)-(F), in which the intermediate layer consists of (G)-(P)-(G), and so on.

Applicants submit that, in claim 42, these structures are linked by the word “or”, and these structures are mutually exclusive. Applicants therefore submit that this recitation is proper and is **not** indefinite. Applicants submit that all of new claims 24-58 are definite.

Claims 1, 2 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (U.S. Patent No. 4,957,980).

Claims 1, 2 and 6 have been canceled without prejudice or disclaimer. Applicants submit that the new claims are not anticipated by Kobayashi et al.

Kobayashi et al. discloses a polyester resin composition which comprises a thermoplastic polyester resin (A), a polyamide resin having a metaxylylene group (B) and a compatibilizing agent (C) (Abstract, col. 2, lines 14 to 19). The polyester resin composition of Kobayashi et al. is a **thermoplastic** resin composition.

In contrast, the composition for coating of the present invention is a **thermosetting** resin composition comprising an epoxy resin as a thermosetting resin composition comprising an epoxy resin as a thermosetting resin and an amine curing agent to form bridges in a cross-linking polymer, i.e., a cured product. Kobayashi et al. describes on col. 1, lines 57 to 68 that in the case of a simple blend of a thermoplastic resin and a polyamide resin having metaxylylene group, transparency of the resulting vessel is remarkably decreased and a compatibilizing agent is further added to improve it.

Thus, a polyamide resin having metaxylylene group is not used as a curing agent. Further, examples of the compatibilizing agent include a compound having an epoxy group and an acid anhydride group in the molecule (col. 3, lines 50 to 52). However, such compound is used as a compatibilizing agent in blending by kneading in the production of the composition, but it is not used for curing.

Therefore, even if a polyamide resin having metaxylylene group and a compound having an epoxy group and an acid anhydride is used together, it is questionable whether sufficient curing occurs during kneading in the presence of a large amount of the thermoplastic polyester resin.

In the present invention, such thermoplastic polyester resin is not an indispensable component and is not used. Further, Kobayashi et al. does not disclose use of the epoxy resin with glycidylamine moiety derived from metaxylylenediamine of the present invention.

Thus, the composition of the present invention is essentially different from that of Kobayashi et al., and new claims 24-58 are not anticipated by Kobayashi et al.

Claims 1-4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by, or in the alternative under 35 U.S.C. 103(a) as obvious over, Kihara et al. (EP 0709418 A2).

Claims 1-4 and 6 have been canceled without prejudice or disclaimer. Applicants submit that the new claims are not anticipated by Kihara et al.

Kihara et al. discloses an epoxy resin curing agent produced by reacting (A) a polyamine (metaxylylendiamine), (B) an epoxy group-containing alkoxypolyethylene polyether compound, (C) hydrophobic epoxy compound having at least one epoxy resin in the molecule and optionally (D) an

unsaturated compound such as acrylic acid (Abstract).

Further, Examples of the epoxy resin to be used from preparing an epoxy resin cured agent of Kihara et al. is monoepoxide having alkoxypolyethylene polyether moiety (page 4, formula (1)). Monoepoxide cannot form a cross-linking structure by curing. In the curing agent of the present invention, such (B) epoxy group-containing alkoxypolyethylene polyether compound is not an indispensable component.

Examples of (C) hydrophobic epoxy compound are described on page 4, lines 32 to 50. However, in the curing agent of the present invention, such (C) hydrophobic epoxy compound is not indispensable component.

In the present invention, specific epoxy resin with glycidylamine moiety derived from metaxylylendiamine is used. In the present invention, use of such specific epoxy resin and specific curing agent in the composition exhibits excellent gas barrier property. However, Kihara et al. does not disclose such specific epoxy resin of the present invention in the epoxy resins to be used for preparing a cured product and in (C) hydrophobic epoxy compound.

The Examiner alleges that Kihara et al. discloses a polyamine that is the reaction product of xylylenediamine with epichlorohydrin, which is reacted with an epoxy and an epoxy resin with glycidylamine moiety derived from xylylenediane is produced (page 4, lines 15 to 18).

Either one of a polyamine or an epoxy resin with glycidylamine moiety is obtained by the reaction of xylylenediane with epichlorohydrin. In the reaction, either one of a polyamine or an epoxy resin with glycidylamine moiety is obtained depending on reaction conditions, e.g. the ratio of xylylenediamine to epichlorohydrin. Thus, when polyamine is obtained by the reaction of

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xylylenediamine with epichlorohydrin as in Kihara et al., either one of two amine groups is changed from primary amine group to secondary amine group and epoxy ring in epichlorohydrin attached to secondary amine group opens to change from -O- to -OH by primary amine group and epichlorohydrin. Therefore, the polyamine thus obtained has no glycidylamine moiety. When the polyamine thus obtained further reacts an epoxy resin, remaining primary amine reacts epoxy group to change from primary amine group to secondary amine group and epoxy ring in the epoxy resin opens to change from -O- to -OH. A cured reaction product thus obtained has no glycidylamine moiety.

On the other hand, when an epoxy resin with glycidylamine moiety is obtained by the reaction of xylylendiamine with epichlorohydrin as in the present invention, two primary amine groups are changed to tertiary amine groups and epoxy groups in chlorohydrin attaches to the tertiary amine groups to form glycidylamine moiety.

Thus, Kihara et al. does not teach the concept of the present invention, and new claims 24-58 are not anticipated by Kihara et al.

Claims 1, 2, 4 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over, Hamabuchi et al. (JP63301264).

The rejection of claims 1, 2, 4 and 6 is moot in view of the cancellation of these claims without prejudice or disclaimer.

Applicants have prepared and attached a partial English translation of JP 63-301264 for reference in the response to this rejection.

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Hamabuchi et al. a coating composition comprising an epoxy resin, a curing agent and a thixotropic agent, wherein said curing agent contains a polyamine derived from xylylenediamine and an acrylic derivative of xylylenediamine as main components.

Hamabuchi et al. describes examples of the epoxy resin to be applied. However, Hamabuchi et al. does not disclose use of the epoxy resin with glycidylamine moiety derived from metaxylylenediamine as in the present invention.

In the present invention use of such specific epoxy resin and specific curing agent exhibits excellent gas barrier property. Hamabuchi et al. does not teach this concept of the present invention., and Applicants submit that the new claims are not anticipated by Hamabuchi et al.

Claims 7-18 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kihara et al. (EP 0709418 A2).

The rejection of claims 7-18 and 23 is moot in view of the cancellation of these claims without prejudice or disclaimer.

As described above, the composition for coating of the newly presented claims is not anticipated by Kihara et al. Applicants further submit that the coated film and the multilayered laminate applied such novel composition of the present invention are not obvious from Kihara et al. because Kihara et al. does not teach to apply such a composition having a good gas barrier property to a coated film and a multilayered laminate.

Claims 5, 19 and 21 are objected to as being dependent upon a rejected base claim, but

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would be allowable if rewritten.

Claims 5, 19 and 21 have been canceled without prejudice or disclaimer. Applicants note that original claim 5 recites the list of formic acid, acetic acid, propionic acid, butyric acid, lactic acid, glycolic acid, and benzoic acid and/or a derivative thereof as component (C). This limitation may be found in new claims 26 and 34. Claims 19 and 21 recite particular limitations on outer layers S_1 and S_2 that may be found in new claims 43 and 45, respectively.


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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Attachment: Partial English translation of JP63-301264

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